UNITED
NATIONS

E

Economic and Social Council

Distr.
GENERAL

E/CN.17/1996/3/Add.1
8 April 1996

ORIGINAL: ENGLISH

COMMISSION ON SUSTAINABLE DEVELOPMENT
Fourth session
18 April-3 May 1996

Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources

Report of the Secretary-General

Addendum

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INTRODUCTION

1. The building blocks for the present addendum have been prepared jointly by those agencies that have cooperated in the work of the Subcommittee on Oceans and Coastal Areas of the Administrative Committee on Coordination (ACC), 1/ a subsidiary body of the Inter-Agency Committee on Sustainable Development (IACSD), since its establishment in 1993 as task manager for chapter 17 of Agenda 21. 2/ Within the ACC Subcommittee, and for each programme area of chapter 17, coordination of inputs was allocated to various United Nations agencies acting as sub-task managers, based on the lead agency concept (see annex). As a complement to the report of the Secretary-General (E/CN.17/1996/3), this addendum provides additional and more detailed information on the implementation of chapter 17. 3/

2. The document is structured along the seven major programme areas of chapter 17 of Agenda 21: (a) Integrated management and sustainable development of coastal and marine areas, including exclusive economic zones; (b) Marine environmental protection: (i) Prevention, reduction and control of degradation of the marine environment from sea-based activities; (ii) Prevention, reduction and control of degradation of the marine environment from land-based sources of pollution; (c) Sustainable use and conservation of marine living resources of the high seas; (d) Sustainable use and conservation of marine living resources under national jurisdiction; (e) Addressing critical uncertainties for the management of the marine environment and climate change; (f) Strengthening international and regional cooperation and coordination.

3. Following instructions from IACSD, the Subcommittee has not developed a specific report on programme area G of chapter 17 (Sustainable development of small islands), for which a special reporting process is in place. Most of the information provided under programme areas A to F is fully relevant to small island developing States and is even more critical to their development than it is for other countries with larger continental masses.

4. This addendum includes (i) a general overview of main policy issues, experience gained and progress achieved; (ii) country experiences in national implementation (distinguishing, when relevant, between developed countries, developing countries, small island developing States and countries with economies in transition); 4/ (iii) experiences of major groups and non-governmental organization (NGOs); (iv) matters related to finance, technology transfer and capacity-building; (v) recent developments, activities and experiences in international cooperation focusing on the activities of the United Nations system; and (vi) conclusions and plans for the future. Because of the broad scope and complexity of chapter 17, some of these sections have been divided into subsections corresponding to the various programme areas mentioned in paragraph 2 above.

I. GENERAL OVERVIEW

A. Integrated management of coastal areas

5. Approximately two thirds of the world's population live in coastal areas. In the past few decades, various factors, such as (a) rapid and accelerating economic development; (b) increasing and wasteful resources consumption; (c) conflicts for resource allocation; and (d) use of the oceans for waste disposal, have caused rapid deterioration of the coastal and marine environment, jeopardizing its ecological integrity and the sustainability of its resource base. After about two decades of experience in integrated coastal area management (ICAM) and some years of effort in the development of ocean management schemes, a significant amount of knowledge, experience and expertise is available. Sectoral approaches to development planning have failed to deal effectively with these problems.

6. Integrated management of watersheds, estuaries and coastal and marine waters has gained recognition as a concept providing a comprehensive, ecosystem-based approach to sustainable development and environmental conservation. The approach is based on a dynamic decision-making process for strategy development and implementation. It requires a policy framework, institutional arrangements, planning capabilities, a solid scientific and technological basis and enhanced international cooperation mechanisms, and places the use of oceans and coastal areas within broader national policy development, translating broad policy decisions into site-specific activities, using local capacity for implementation.

7. However, despite the growing international acceptance of the concept of ICAM, it appears that it has not, as yet, captured the full attention of decision makers in either developing or developed countries. ICAM is not a panacea for all problems of coastal areas but there are elements common to all situations, such as (a) the need for a gradual process of ICAM implementation; (b) the importance of individual natural resources; (c) the key role of institutional arrangements; (d) the specificity and local possibilities of implementation; and (e) the need for flexibility in the application of recommended tools and techniques.

B. Marine environmental protection

1. Environmental protection from sea-based activities

8. A number of sea-based activities contribute directly to about 20 per cent of marine pollution. Some cause harm due to the discharge of polluting substances; others inflict a more insidious form of damage by disturbing the natural order and altering habitat. Such changes may take months, years or even decades to rectify, while some are permanent. Frequently an activity gives rise to a combination of these effects. Maritime transportation, offshore oil and gas exploration/exploitation (including accidental spillage arising therefrom) and disposal of wastes and other matter by dumping at sea are currently of the greatest concern, although such other activities as sand and gravel extraction

from the seabed and the laying of submarine pipelines and cables can also have detrimental effects.

9. A precautionary and anticipatory approach is necessary to prevent degradation of the marine environment. This requires, inter alia, the adoption of environmental impact assessments, clean technologies and waste minimization techniques, the proper handling, storage and transportation of hazardous substances, and an environmentally acceptable means of disposal of wastes. It also requires that due attention be given to (a) the accidental transfer of species through ballast water; (b) ocean dumping of sewage, and (c) air pollution from ships.

10. Well-established regulatory regimes have evolved at the global level in respect of maritime transportation and waste disposal by dumping, while the emergence of new issues, such as the shipment of irradiated nuclear fuel, requires new thinking. While the solution to many problems is management-related, access to scientifically derived data and information and due consideration of socio-economic aspects are essential.

11. By and large, the problems that have to be dealt with in ensuring that shipping, offshore oil and gas production, dredging and so forth are conducted in an environmentally sustainable manner are the same for developed and developing countries, and there should not be significant variations in approach. Where differences do occur, they are in the developing countries' access to the scientific and technological means required to achieve that end, such as analytical laboratories and indigenous technical capability. This can be dealt with through reliance on outside resources in the short term, but sustainable development ultimately rests on the attainment of self-sufficiency in human and other essential resources in the longer term. It is therefore important to continue support for activities within the United Nations system that specifically address the above aspects, including such well-proven institutions as the World Maritime University.

2. Environmental protection from land-based sources of pollution

12. Land-based sources contribute 80 per cent of marine pollution. The major causes of immediate concern in the marine environment on a global basis are coastal development and the attendant destruction of habitats, eutrophication, microbial contamination of seafood and beaches, fouling of the seas by plastic litter, progressive build-up of chlorinated hydrocarbons and accumulation of tar on beaches. The contaminants that pose the greatest threat to the marine environment are sewage, nutrients, synthetic organic compounds, sediments, litter and plastics, metals, radionuclides, oil/hydrocarbons and polycyclic aromatic hydrocarbons (PAHs). Many of the polluting substances originating from land-based sources, in particular persistent organic pollutants (POPs), are of concern to the marine environment since they exhibit at the same time toxicity, persistence and bioaccumulation in the food-chain. Human settlements, land use, construction of coastal infrastructure, agriculture, forestry, urban development, tourism and industry can also affect the marine environment. Coastal erosion and siltation are of particular concern.

13. Although a number of international agreements now supplement national regulations aimed at protecting the seas from sea-borne sources of pollution, much remains to be done to control land-based sources, the main contributors to contamination of the sea. But recent intergovernmental initiatives, in particular the adoption in November 1995 of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, are encouraging (see paras. 29, 101-104 and 125 and 126). Part XII (articles 192-237) of the United Nations Convention on the Law of the Sea is devoted to the protection and preservation of the marine environment, but only two articles deal specifically with marine pollution from land-based sources. Article 207 requires States to adopt laws and regulations and to take other measures as may be necessary to prevent, reduce and control pollution from land-based sources. Article 213 further requires States to enforce their laws and regulations and to take legislative and other measures to implement applicable international rules and standards.

14. While recognizing that the United Nations Convention on the Law of the Sea provides the international legal basis upon which to pursue the protection and sustainable development of the marine environment, chapter 17 of Agenda 21 calls upon States, in accordance with the provisions of the Convention, to commit themselves, in accordance with their policies, priorities and resources, to prevent, reduce and control degradation of the marine environment so as to maintain and improve its life-support and productive capacities. With regard specifically to prevention, reduction and control of degradation of the marine environment from land-based activities, chapter 17 requires States, in carrying out their commitment to deal with such degradation, to take action at the national level and, where appropriate, at the regional and subregional levels, and, in so doing, to take account of the Montreal Guidelines (see Agenda 21, para. 17.25), as well as other relevant instruments such as the 1992 Paris Convention, the 1992 Baltic Convention, the 1993 Baltic Protocol and other general obligations of regional seas agreements.

C. Marine living resources of the high seas

15. High seas fisheries account for about 10 per cent of total world marine fish catches, and the state of many fish stocks is either unknown or of concern. The effective conservation and management of high seas resources, based on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, adopted on 4 August 1995, 5/ are essential if these resources are to continue to make a long-term and sustained contribution to food security, international trade and economic development.

16. Demand for fish for food is increasing rapidly in line with a growing world population. High seas fisheries are capable of contributing significantly to food security, provided that resources are harvested in a sustainable manner. Therefore, a primary objective of high seas fisheries conservation and management should be to ensure that resources are exploited in a rational and orderly way.

17. For the conservation and management of high seas fisheries to be effective, international cooperation, and the role of subregional and regional fisheries organizations and arrangements, must be strengthened. The focus of attention in achieving enhanced conservation and management of high seas fisheries rests principally with the flag state and in the responsibility these States assume and the control that they exert over vessels flying their flags. Since most vessels in high seas fisheries operate, or have the capacity to operate, on a distant-water basis, it is not always easy for flag States to exercise effective control over their fleets; some countries do very little to check the standards of vessels flying their flag, the quality of their crew and the appropriateness of their fishing techniques. Consequently, a complementary role for port State measures in accordance with international law was also considered by the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks as a means of enhancing high seas fisheries conservation and management.

D. Marine living resources under national jurisdiction

18. Marine fisheries yield 80 to 90 million tonnes a year (about 90 per cent of which is taken from waters under national jurisdiction). About 25 per cent of the fish stocks for which assessments are available are overexploited and 44 per cent more are at risk of being so if not immediately and properly managed. Annual economic losses reach US$ 50 billion, fisheries are heavily subsidized and conflicts are common within the sector, while the fisheries environment is being damaged, mainly by other coastal and non-coastal economic activities. The situation is globally unsustainable and progressively worsening, leading to growing conflict, and the continuing demand for food from the sea requires urgent action to improve fisheries management as well as institutional and research capacities. Aquaculture will play an increasingly important role in contributing to the food supply but serious problems have been encountered with uncontrolled development of extensive coastal aquaculture systems.

19. In order for coastal States to obtain the social and economic benefit from the sustainable utilization of marine living resources under their national jurisdiction, it is necessary to develop marine living resources to meet human nutritional needs and other social and economic goals; protect the interests of indigenous people; maintain or restore fish stocks at appropriate levels; reduce the environmental impact of fishing gear and practices; protect endangered species and ecosystems; develop aquaculture and small-scale fisheries; strengthen legal and regulatory frameworks; reduce post-harvest losses and discards; improve fish processing and distribution; and promote the use of environmentally sound technology.

20. Attention to these issues has evolved in the context of international activity aimed at rationalizing the conservation and sustainable use of the fishery resources of the oceans. The 1982 United Nations Convention on the Law of the Sea came into force in November 1994 and its provisions set forth rights and obligations of States with respect to conservation and utilization of living marine resources in the exclusive economic zones (EEZs). The International Conference on Responsible Fishing was held in Mexico in 1992 and resulted in the call for a Code of Conduct for Responsible Fisheries, which then was developed

by the Food and Agriculture Organization of the United Nations (FAO) and adopted by the Conference of FAO in October 1995.

E. Critical uncertainties and climate change

21. The available data and knowledge regarding the dominating processes, interactions and feedback mechanisms between the compartments of this planet are not sufficient to provide an adequate basis for management and forecasting in relation to climate change. The uncertainties are still too great, although noticeable progress has been made in the past few years. These uncertainties are being reduced through three main parallel courses of action: (i) research and establishment of modelling tools; (ii) development of human resources and capacity development to use those tools; (iii) development and establishment of adequate observation systems leading to the Global Ocean Observing System (GOOS).

22. Intergovernmental and non-governmental research is essentially carried out through the World Climate Programme component on research (WCRP) and the International Geosphere-Biosphere Programme (IGBP). Additional programmes deal with biological components, including the Global Ocean Ecosystem Dynamics (GLOBEC), the Global Investigation of Pollution in the Marine Environment (GIPME) and the regional Large Marine Ecosystem (LME) programmes. The Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide an authoritative global assessment of climate change and its impacts and related socio-economic aspects. It is the main provider of scientific information to the United Nations Framework Convention on Climate Change (see also the addendum to the report of the Secretary-General on chapter 9 of Agenda 21 (Protection of the atmosphere) (E/CN.17/1996/22/Add.1), which is before the Commission).

23. Human resources development and capacity-building address both research and observational programmes, involving education, training and technical assistance components, and capital assistance for infrastructure support and development. The strategy to achieve the goals is based on using the existing regional mechanisms, adjusted as necessary. The issues of the oceans will be further highlighted in the preparations and celebrations for the International Year of the Ocean, which the United Nations General Assembly has declared for 1998 (resolution 49/131). The developments of adequate observations are mainly intergovernmental based on scientific findings and modelling requirements, and are building on existing partial systems. A framework and strategy for the gradual establishment of GOOS have been developed since the United Nations Conference on Environment and Development (UNCED), including a number of regional components.

F. International and regional cooperation

24. International cooperation is required to support and supplement national efforts, and the effective implementation of strategies and activities under programme areas A to E (and also G) of chapter 17 of Agenda 21 requires active,

efficient institutional arrangements at the subregional, regional and global levels, as appropriate. Actions necessary to support the implementation of chapter 17 include (a) integration of relevant sectoral activities addressing marine and coastal activities at subregional, regional and global levels, as appropriate; (b) promotion of information exchange and, where appropriate, institutional linkages between subregional, regional and global institutions; (c) promotion, within the United Nations system, of regular intergovernmental review and coordination of relevant environmental issues; (d) promotion of effective coordination between the components of the United Nations system dealing with environment and development in marine and coastal areas as well as links with relevant international development bodies.

25. Within the United Nations system, and in the field of oceans and coastal areas, there is a long tradition of cooperation notably between those agencies currently members of the recently established ACC Subcommittee on Oceans and Coastal Areas. 1/ Other inter-agency mechanisms include the Intersecretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO) 6/ and the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). 7/ This cooperation was enlarged during the preparatory phase of UNCED and, through Agenda 21, can base itself on a common approach to issues of mutual interest.

26. There are also numerous regional and global intergovernmental institutions, both within and outside the United Nations system, with sectoral and intersectoral competence in ocean-related issues. However, there is a need to improve coordination among them, as well as among their respective constituencies, notably at the national level, and a need for significantly increased financial support for them to discharge their role effectively. The London Workshop on Environmental Science, Comprehensiveness and Consistency in Global Decisions on Ocean Issues (December 1995) confirmed the role of the United Nations system as a coordination mechanism for ocean affairs; it recommended that the ACC Subcommittee on Oceans and Coastal Areas be strengthened and that GESAMP, as a source of scientific advice for the formulation of priorities for global action, be made more effective.

II. COUNTRY EXPERIENCES

A. Integrated management of coastal areas

27. Following UNCED, many Governments have adopted or strengthened their policies in relation to the protection and management of marine and coastal areas that further the process of integrated coastal area management. Increased attention has been given to environmental legislation and the establishment of environmental agencies. Only now, however, has it been possible to harvest some of the results of national and international initiatives that started more than a decade ago. Most of the effort - though technically innovative and in various cases quite successful at the local level (generally associated with small geographical areas and/or a limited range of activities) - has not been effectively integrated into the national development planning process and has not attracted a substantial commitment of funds, with the result that these undertakings have not been as effective as they could have been in the medium

and long term. Less attention has been given to the wider marine areas under national jurisdiction. However, with the entry into force of the United Nations Convention on the Law of the Sea, and the full recognition of the relevance of marine areas in meeting essential human needs (e.g., food, employment, resources and recreation), countries are giving a new and expanded role to the integrated management of the marine/coastal resources under national jurisdiction and to related arrangements for regional and international cooperation (particularly for shared resources).

B. Marine environmental protection

1. Environmental protection from sea-based activities

28. Important environment conventions adopted at the global and regional levels enjoy a large measure of support from developing countries. In the case of maritime transportation, the shift in emphasis from flag State to port State control is expected to raise the safety and pollution prevention performance of ships registered in developing countries. Current steps to revise the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers will have a similar effect on the competence of sea-going personnel. This in itself will put additional financial demands on developing countries while leaving some other aspects of the problem, such as associated shore-based infrastructure, unimproved. In this latter respect, current work carried out by the International Maritime Organization (IMO) in association with the United Nations Conference on Trade and Development (UNCTAD) and others to develop financial mechanisms by which the necessary funding for navigational safety and pollution prevention measures are generated from the users of these facilities, in accordance with the Polluter Pays Principle, promises to remove some of the financial burden from coastal States. In many developing countries the existence of a safety and environmental culture is still weak or missing altogether. Public awareness and education, along with assistance for training institutions is necessary to ensure that proper safety and environmental protection practices are followed.

2. Environmental protection from land-based sources of pollution

29. The issue has been addressed through an intensive intergovernmental process which followed on the efforts accomplished in Halifax, Canada (1991), where experts developed principles for the protection of the marine environment against land-based sources of pollution; and Nairobi (1991), where experts formulated a draft strategy for the reduction of degradation of the marine environment from land-based sources of pollution and activities in coastal areas. The Meeting of Government-designated Experts Focusing on the 1985 Montreal Guidelines for the Protection of the Marine Environment against Land-based Sources of Pollution took place in Montreal, Canada from 6 to 10 June 1994 and it decided that the 1985 Montreal Guidelines could serve as one source of material to draw on in preparing a global programme of action for the protection of the marine environment from land-based activities. Following an intensive process of negotiation, a Global Programme of Action for the Protection of the

Marine Environment from Land-based Activities was adopted in November 1995 in Washington, D.C., which will provide the basis for national and international action towards reduction of pollution of the oceans from land-based activities, contributing, inter alia, to (a) improvement of coastal habitats and productivity; (b) reductions of threats to food security and safety; (c) reduction of hazards to human health; and (d) reversing present trends of uncontrolled practices and physical alterations in the coastal zone.

30. The Global Programme of Action is designed to assist States in taking action individually or jointly within their respective policies, priorities and resources which will lead to the prevention, reduction, control and/or elimination of the degradation of the marine environment, as well as to its recovery from the impacts of land-based activities.

C. Marine living resources of the high seas

31. Some developed countries exercise reasonable levels of flag State control over their fleets that operate on the high seas. In these countries national systems of authorization are in place and comprehensive reporting is required. However, there is scope for improving systems of administration in developed countries relating to high seas fisheries, and for information collected to be provided to subregional or regional fisheries organizations or arrangements for conservation and management purposes. The special needs of developing countries with respect to high seas fisheries have been identified by the international community. Efforts to strengthen national capacity and institutions in these countries is required so that they can meet obligations with respect to the conservation and management of high seas resources and, as appropriate, participate in high seas fisheries. This consideration is particularly important for those small island developing States that are heavily dependent on high seas fisheries resources for their social and economic development. Many of the countries with economies in transition have been, or continue to be, important high seas fishing countries. As a result of economic rationalization and adoption of market economies, the activity of these fleets on the high seas has declined, partly as a consequence of a reduction, or elimination, of industry subsidies. This reduction in fleet sizes in these countries should enable them to further rationalize their fleets and high seas operations.

D. Marine living resources under national jurisdiction

32. The catch by the developed countries has decreased since 1992, partly because of a number of fisheries collapses or crises in the North Atlantic, as a result of a combination of overfishing and unfavourable environmental conditions. Despite the difficulties encountered, efforts are being made to reduce excess fleet capacity and investment and to improve management. More efficient management techniques are being adopted, such as effort quotas, individual transferable quotas (ITQs) and limited entry into fisheries. Research is being redirected towards management needs, with greater attention to uncertainty and its impact on decision-making and to impacts of environmental degradation and change. Developing countries significantly increased their share of the total world catch and international trade during the 1970s and

1980s, surpassing developed countries in 1985. The trend continued after 1992 despite an overall stagnation of world landings. A few countries are developing adequate fishery research and management capacity. In many others, the fishery data acquisition system is not properly maintained and the research capacities in support of sustainable development and management are insufficient. In countries with economies in transition - for example, in Eastern Europe - fisheries have undergone major changes. Long-range fleets have been forced by the new economic policies to retrench in national EEZs and surrounding waters, sometimes increasing effort levels beyond sustainability and requiring major fleet decommissioning or other effort-reduction policies.

E. Critical uncertainties and climate change

33. Many developed countries have established national coordination mechanisms and institutions to deal with marine observations in coastal zones for research, quality assessments and the provision of improved forecasts for safety on land and afloat. They have also adopted some measures in an attempt to adapt to potential climate changes and sealevel rise. Some developed countries are carrying out specialized research as regards the effects of UV radiation on the marine environment. Most developed countries participate in ocean research oriented towards climate variations and the role of the oceans in the CO_2 budget, and are developing vulnerability assessments for coastal zones, including marine pollution. The experiences demonstrate very clearly the benefits of cooperation and the need for regional joint actions, as illustrated by the regional conventions dealing with the Baltic and North Seas. Many developed countries are participating in the development of GOOS.

34. Several developing countries have established national marine policies, including those relating to science and services. Many are actively involved in coastal zone research, observations and assessments. Many participate in specific, dedicated observations of sealevel (Global Sea-level Observing System (GLOSS)), nutrient contents, marine debris and oil pollution, for example. Many developing countries strongly support the development of GOOS, but participation is limited. Some developing countries are associated with large-scale research projects in climate change, oceans and CO_2, effects of pollution and effects of UV radiation. They focus on the regions of oceans directly related to their interests. The experiences clearly show the benefits of cooperation and the need to use an intergovernmental mechanism to reach agreements.

35. The participation of small island developing States in the relevant activities is limited. Experience suggests that further efforts are required to associate these States with the relevant regional programmes. However, several of these States are participating in dedicated activities - for example, sealevel observations (GLOSS), assessments of marine debris and pollution and waste management.

36. Several countries with economies in transition have traditionally been strongly involved in most of the relevant research programmes. They carried out extensive ocean observations and had national coordination mechanisms. Due to current economic conditions, however, a marked decrease in these activities is noticeable internationally. For instance, this is shown in the decrease in the

exchange of international oceanographic data since the initiation of the transition period. Experiences with international cooperation also identify the need for large amounts of technical and financial assistance to achieve adequate attention to the coastal areas of many of these States (e.g., Black Sea and Baltic Sea).

F. International and regional cooperation

37. Developed and developing countries (as well as countries with economies in transition) have long collaborated in the establishment of a number of intergovernmental bodies to deal with sectoral and intersectoral issues in relation to oceans. Since UNCED, the functioning and performance of many of them, particularly in terms of their capacity to manage natural resources and environmental issues, have been reviewed. Experience shows that these bodies have been efficient in raising awareness, developing databases, promoting a common understanding of issues and potential solutions and mobilizing the limited research capacity available (particularly in the developing countries). Experience also shows that these bodies have been rather inefficient at making and implementing effectively the politically difficult decisions required for resource allocation and for constraining rates of use to sustainable levels. It also shows that the role of NGOs and the private sector in such bodies need further strengthening.

III. EXPERIENCES OF NON-GOVERNMENTAL ORGANIZATIONS

38. The NGOs with ocean and coastal expertise participating in the work of the governing bodies of organizations of the United Nations system are international and national associations representing both environmental protection interests and various facets of maritime industry, both at artisanal and industrial levels. Among the more active international organizations are environmental groups, such as Friends of the Earth International, Greenpeace International, the International Union for Conservation of Nature and Natural Resources (IUCN), and the World Wide Fund for Nature; animal welfare groups, such as the Humane Society International and the International Fund for Animal Welfare; industry associations, such as the International Association of Independent Tanker Owners (INTERTANKO), the Oil Companies International Marine Forum (OCIMF) and the Exploration and Production Forum; and artisanal groups, such as the International Collective in Support of Fishworkers. While national and regional groups have also made important contributions in relation to the implementation of chapter 17 of Agenda 21, the present review highlights initiatives that are more international in scope.

39. Although further improvements in the mechanisms of collaboration between NGOs and the United Nations system (and the intergovernmental system in general) are still needed, the interaction has been reasonably effective. The granting to NGOs of consultative status with the United Nations and its agencies has enabled NGOs to attend key meetings on oceans, to receive documentation and to contribute actively by participating in plenary meetings and working and drafting groups, preparing technical reports and newsletters such as ECO and by convening round tables and other informal discussions with government and United

Nations system officials. NGOs have also been highly effective in acting through national delegations for the development of national positions at key international conferences.

40. In the area of fisheries, national and international environmental and fisheries NGOs were involved in the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks and in the drafting of the FAO Code of Conduct for Responsible Fisheries. NGOs contributed important policy, technical, scientific and legal input on issues such as the precautionary approach, ecologically acceptable and selective fishing gear and techniques, overfishing and excess of capacity, and aquaculture, and have been instrumental in generating public awareness and media interest in the global fisheries crisis. In regional and national forums, fisheries NGOs have been active in defending the role and rights of small-scale and indigenous fisheries.

41. Within the International Whaling Commission (IWC), NGOs have sponsored or carried out scientific work, including a follow-up to a pioneering study of DNA methods for monitoring and control of whaling and surveys of whales in the IWC Southern Ocean and Indian Ocean whale sanctuaries, on humane killing techniques, inspection and observation requirements and international commerce in whale products.

42. NGOs have addressed the regulation of offshore activities, such as ocean dumping, shipping, pollution from ships, and offshore oil and gas activities. Within the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention), which functions under the auspices of IMO, environmental NGOs have supported bans on ocean dumping of radioactive and industrial wastes, and incineration at sea as agreed in 1993.

43. NGOs were instrumental in developing the Washington Declaration and Global Programme of Action for the recent UNEP Conference on Protection of the Marine Environment from Land-based Activities, in particular regarding the development of pollution prevention programmes by promoting clean production and reduced dependence on toxic substances, including persistent organic pollutants (POPs) and alternatives thereto; technical assessments of the harm caused by POPs; special consideration of financing and institutional considerations (as recommended by UNCED); alternative technologies; exchange of information; public access to information and registers; and habitat restoration programmes; and by contributing to a new global agreement on POPs.

44. NGOs have contributed significantly to the promotion of marine and coastal protected areas (MPAs) globally and, in many cases, they manage or support them, and produce awareness materials and education programmes to enable local users and activity-based groups to understand the importance of protected areas as a management tool for the protection of marine and coastal biodiversity. In the Caribbean, NGOs are responsible for managing national protected areas, including the Bahamas, Saint Lucia and Montserrat national trusts. Internationally, NGOs have stressed the need for a special study on a global representative system of MPAs, offering recommendations related to their establishment and effective management.

45. Overall, NGOs have made and continue to make significant contributions to decision-making processes concerned with marine and coastal issues. As one of the major groups addressed in Agenda 21, NGOs are key stakeholders in the effective implementation of chapter 17 and their effective participation in the development and implementation of policies and programmes related to oceans should be further facilitated.

IV. MATTERS RELATED TO FINANCE, TECHNOLOGY TRANSFER AND CAPACITY-BUILDING

46. Finance, technology transfer and capacity-building are major issues that affect significantly the capacity of countries, particularly developing countries, to implement Agenda 21. The following sections review these issues, based essentially on experiences within the United Nations system.

A. Finance

47. Most United Nations agencies have not received any particular increase in their regular programme budgets to support the effort required of them in the implementation of Agenda 21. As a consequence, the normative and technical assistance given to countries has had to come from within existing means, usually decreasing in real terms. Modest additional support has often come from the extrabudgetary resources of agencies' field programmes.

48. The Global Environment Facility (GEF) has become a critical, albeit diminishing, source of funding with regard to ocean-related activities under the international waters and biodiversity components, as reflected in its 1995 operational strategy. GEF was originally established as a pilot programme in 1991. In March 1994 participating Governments successfully concluded negotiations to restructure the Facility into a permanent funding mechanism and replenished its Core Fund with over US$ 2 billion to be committed over a three-year period. Currently, of the US$ 911 million allocated to GEF projects, about 14 per cent or US$ 130 million is dedicated to the international waters component and 44 per cent (US$ 400 million) to biodiversity. Resources devoted to international waters have fallen sharply, however, from about US$ 127 million in the pilot phase (1991-1994) to US$ 4 million in the post-pilot phase (1995-1998).

49. Further development and eventual application of the concept of sustainable financing to rectify present deficiencies in the provision of facilities in ports for the reception of ship-generated wastes can be expected to produce marginal increases in freight charges, for which the consumer will ultimately pay. Acceptance of this concept could pave the way for the development of a system of charges to cover the provision of other essential maritime services, such as the provision of hydrographic surveys and navigational and other safety aids in international straits, as well as necessary anti-pollution measures such as salvage capacity and oil-spill combating equipment.

50. With the 1982 United Nations Convention on the Law of the Sea now in force, and in order to face their responsibilities in line with the provisions of the

Code of Conduct for Responsible Fisheries, States require financial assistance to support their efforts to make full and sustainable use of their resources - for example, to strengthen their monitoring, control and surveillance capacity, and to start the process of effort-reduction, which should lead to improved economic viability of fisheries and to initiatives for revitalizing fishing communities. Financial resources are also needed to support research efforts, particularly to develop GOOS and its living resources module, and the regional networks of research institutions working on living resources recommended by the World Bank/UNDP/European Community/FAO Study of International Fishery Research (SIFR).

B. Technology transfer

51. Effective control of pollution from ships and offshore oil and gas platforms is highly dependent on the availability of up-to-date technologies in a number of subject areas. Of greatest significance in terms of investment by the maritime industry was the adoption by IMO in March 1992 of amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL Convention), requiring oil tankers delivered after July 1996 to be of double hull or mid-height deck construction. The International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC), 1990, which entered into force on 13 May 1995, in addition to requiring adequate capability to deal with pollution emergencies, calls on Governments and IMO to play an active role in the promotion of research and development relating to the enhancement of state-of-the-art oil pollution preparedness and response through information exchange. In this connection IMO has co-sponsored the First (June 1992) and Second (May 1995) Oil Spill Research and Development Forums, covering such topics as bioremediation, mechanical containment and recovery, surveillance techniques and equipment (e.g., remote sensing) and chemical countermeasures.

52. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, adopted in Washington, D.C., in November 1995, makes provisions for promoting access to cleaner technologies and expertise to address land-based activities that degrade the marine environment, in particular for countries in need of assistance. Priority is given to environmentally sound, appropriate and affordable technologies needed for the adequate treatment of sewage and waste water as well as for the development and production of substitutes for persistent organic pollutants still in use in many countries all over the world.

53. During the past 20 years developments in the field of fishing technology have greatly increased the effectiveness of fishing activities. Although, in principle, this is economically positive, improved technology, if not paired with effective fisheries management, results in overexploitation of stocks and economic degradation of fisheries. Low-cost, high technology solutions to improve real-time monitoring of fishing activities are available through the use of transponders to assist conservation and management of high seas fisheries. Technological developments are needed to improve fishing gear selectivity and to reduce negative environmental impacts. Satellite vessel tracking offers an unprecedented opportunity to improve the real-time monitoring of fishing fleets and effort control.

C. Capacity-building

54. Ongoing human resource development in relation to research and climate change is mostly implemented at the regional level through regional bodies. The programmes of IOC regional subsidiary bodies provide a comprehensive approach for meeting the core human resource needs in marine sciences. Since UNCED, regional information and communication networks of national institutions have been, or are being, developed, often through the regional bodies of United Nations agencies. These networks provide a means of exchanging data and scientific information and organizing regional cooperative activities. Support has been given to the development of non-United Nations regional bodies as a means to strengthen regional capacity. FAO, for instance, has enhanced the functioning of many non-FAO fishery bodies, particulary in West Africa, Latin America and the South Pacific.

55. The national and international institutional mechanisms required to implement chapter 17 of Agenda 21 need to be strengthened in most cases. The intersectoral nature of the oceans requires functioning coordination and cooperation mechanisms, also at the national level. Several Member States have established such bodies, which provide the national link with the related international organizations and programmes.

56. UNCHS has developed mechanisms for human resource development and capacity-building for ICAM, built within each of its programmes and projects. IAEA carries out extensive capacity-building and assessment programmes in the area of marine radioactivity. Building on its considerable experience gathered during 19 years of cooperation with the Mediterranean Action Plan (MAP), the IAEA Marine Environment Laboratory in Monaco has contributed to assessments of all forms of pollution in the marine environment (PAHs, oil/hydrocarbons, synthetic chemicals, sewage, metals, radionuclides, for example) mostly through cooperation with developing countries. The World Health Organization (WHO) is sponsoring and/or organizing courses and workshops on environmental impact assessment of coastal developments, for either urban or tourist areas. UNESCO has carried out numerous activities in support of ICAM through its programmes COMAR (Coastal marine programme), PROMAR (Promotion of marine sciences) and TREDMAR (Training and education). Coastal and marine remote-sensing learning modules are used by around 600 institutions worldwide. The Division for Ocean Affairs and the Law of the Sea has set forth the Action Plan for Human Resources Development and Capacity-building for the Planning and Management of Coastal and Marine Areas (1993-1997) and launched jointly with UNDP, in 1993, the TRAIN-SEA-COAST Programme to strengthen the existing capabilities of local and regional training institutions and individuals in the field of coastal and ocean management. The programme benefits from the technical experience and course materials from the TRAINMAR and TRAINFORTRADE Programmes of UNCTAD.

V. RECENT DEVELOPMENTS AND EXPERIENCES IN INTERNATIONAL COOPERATION

57. International cooperation has progressed in areas of importance for the oceans and coastal areas, which should be mentioned here even though they do not form part of chapter 17 of Agenda 21, such as the conventions on climate and

biodiversity. The United Nations Framework Convention on Climate Change, which was signed by 155 countries participating in UNCED, recognizes that oceans are a major sink for carbon oxide and a powerful thermic regulator of climates. All countries ratifying the Convention agree to take climate into account when developing natural resources and managing coastal areas. The Convention on Biological Diversity was drafted during the period 1990-1992 and opened for signature at UNCED. The Convention entered into force on 29 December 1993. It stresses an ecosystem approach to development and is of great relevance to oceans and coastal areas. The establishment of protected coastal areas will contribute to the in situ conservation of the fauna and flora of the ocean and coastal areas.

58. At the second session of the Conference of the Parties to the Convention on Biological Diversity (Jakarta, November 1995), Governments, when addressing conservation and sustainable use of marine and coastal biological diversity:

(a) Encouraged the use of integrated coastal area management as the most suitable framework for promoting conservation and sustainable use of coastal biological diversity;

(b) Supported the implementation of the FAO Code of Conduct for Responsible Fishing, the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 5/ and the Washington Declaration and Global Programme of Action for the Protection of the Marine Environment from Land-based Activities;

(c) Invited the United Nations General Assembly, United Nations specialized agencies and other intergovernmental and non-governmental organizations to review their programmes of work with a view to improving existing measures and developing new actions that promote conservation and sustainable use of marine biological diversity.

59. In chapter 17 of Agenda 21, the special needs of small island developing States were stressed, and it was recommended that a global conference be held on the subject. This was agreed to by the General Assembly in December 1992 (resolution 47/189) and the Conference was held in Barbados in 1994, raising awareness about the special needs of small island developing States, providing the basis for the harmonization of efforts by the United Nations system, addressing the issue of communication between those States (e.g., through networking), establishing a focal point in the Department for Policy Coordination and Sustainable Development of the United Nations Secretariat, and giving visibility to the Alliance of Small Island States (AOSIS).

60. The United Nations and its specialized agencies have developed subsidiary regional mechanisms (FAO regional fishery bodies, United Nations regional commissions, UNEP regional seas coordination units, IOC regional bodies) to deal with sectoral and cross-sectoral issues of regional interest and to ensure an appropriate interface with their global governing bodies. There is need, however, to encourage, at both the programme and policy levels, a greater interface between the regional bodies of United Nations agencies as well as

between their counterpart organizations and institutions and representatives at the national level. Intergovernmental subsidiary bodies have been established for most of the major oceanic regions and provide a forum for the exchange of views as well as for the harmonization of national and regional priorities and policies with those emerging at the global level. However, the lack of adequate means for the secretariats of these bodies to implement decisions and start catalytic activities remains an impediment to effective implementation.

61. The United Nations regional commissions address ocean and coastal area concerns within a wider mandate and the activities undertaken in this context would benefit from a closer interface with counterpart regional mechanisms of the agencies as well as from increased contact with global and intergovernmental initiatives. The participation of the regional commissions in other regional meetings and, particularly, in inter-agency consultations is affected negatively by the lack of financial resources.

62. Liaison between United Nations secretariats and national counterparts is facilitated by the designation of national representatives or focal points and, in some cases, by established agency representation at the national level. Some countries have established internal coordination mechanisms, the mandates of which do or could apply to the oceans and coastal areas. In the vast majority of cases, however, the communication between the various sectors at the national level is not sufficient to deal with the basic issues embedded in chapter 17 of Agenda 21. The resulting discordance in policy is sometimes reflected in decisions taken by the governing bodies of organizations of the United Nations system, as well as in bilateral and multilateral funding. Thus, although there is a firm basis of cooperation between secretariats at the inter-agency level, there remains an urgent need for Governments to reflect a wide and comprehensive intersectoral approach in their establishment of national policy.

63. The ACC Subcommittee on Oceans and Coastal Areas was established to (a) monitor and review progress in the implementation of chapter 17 and related matters of Agenda 21 and report thereon to IACSD; (b) prepare proposals for IACSD and other relevant bodies to enhance the effectiveness of cooperation and coordination, and facilitate such in the implementation of chapter 17 of Agenda 21, including financial means; (c) consider and give effect to the possibilities and means of joint activities and programming for the implementation of chapter 17; (d) identify the needs for and facilitate the coordination of activities of the United Nations system relating to chapter 17; (e) interact with joint scientific and advisory bodies, which is expected to provide the scientific basis for policy recommendations; (f) enhance the exchange of information, including information on relevant intergovernmental agreements and decisions, existing and proposed programmes, operational activities, and cooperative and coordinating arrangements; and promote, where appropriate, harmonized and shared information systems; and (g) assist in the preparation of system-wide reports, as required, on developments with respect to oceans and coastal area issues and the implementation of Agenda 21 as regards the protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas, and the protection, rational use and development of their living resources and related capacity-building.

64. The ACC Subcommittee on Oceans and Coastal Areas itself has facilitated and improved cooperation among bodies of the United Nations system and, apart from joint integrated reporting on progress achieved in the implementation of Agenda 21, has the potential to become a forum for joint programming. As a first step, a Cooperative Programme Framework for Integrated Coastal Area Management is being developed. GESAMP, the IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection, originally established to advise solely on marine pollution issues, has broadened its terms of reference to be able to fully respond to the needs of its sponsoring agencies for scientific advice on all aspects of marine environmental protection and management. The Aquatic Sciences and Fisheries Information System (ASFIS), co-sponsored by the Division for Ocean Affairs and the Law of the Sea of the United Nations Secretariat, IOC/UNESCO, FAO and UNEP, is responsible for the production of the Aquatic Sciences and Fisheries database (ASFA), which is the largest and most widely used database on fisheries and aquatic science. It has recently concluded a new agreement to produce, in addition to the printed version, a CD-ROM version, thus making the database available to a much wider community.

65. The detailed contributions to international and regional cooperation in relation to the various programme areas of chapter 17 are summarized below.

A. Integrated management of coastal areas

66. Collaboration between United Nations agencies is active. UNEP, IOC and IAEA cooperate in support of the IAEA Marine Environment Laboratory, which provides technical backstopping to both UNEP and IOC monitoring programmes in the marine environment and coastal areas for validation and data quality control. UNESCO/IOC has started a new project on environment and development in coastal regions and in small islands (1996-2001). WMO collaborates with the IOC marine observing systems and services. United Nations agencies have cooperated on ICAM with intergovernmental organizations outside the United Nations system as well. In addition, United Nations organizations have worked together with NGOs, universities and research institutions.

67. Several activities in ICAM have been undertaken at the country level within the framework of the UNEP Regional Seas Programme and in cooperation with United Nations and other organizations. These activities include (a) the preparation of planning and management documents in selected areas and in support of coastal area management plans (CAMPS), primarily in Mediterranean countries; (b) the development and application of selected tools and techniques for ICAM - for example, geographic information systems (GIS), carrying capacity assessment (CCA) for tourism and hazard assessment and risk management (HARM), at a number of sites in the Mediterranean; and (c) the improvement, updating and expansion of the methodological basis for ICAM, including the preparation of guidelines for ICAM, which are being applied and tested within the Regional Seas Programme.

68. UNDP has currently a portfolio of technical assistance programmes amounting to US$ 70 million, mostly through the Global Environment Facility (GEF). The goal is to develop an integrated management system for the sustainable use of resources at the regional, national and local levels. The span of the UNDP

portfolio runs from freshwater basins to coastal areas to the 200-mile exclusive economic zones and beyond.

69. Some other agency activities include country case-studies undertaken by UNESCO in Asia and the Pacific on mangrove research and management, in Africa on coastal zone research and management, in the Caribbean on coastal productivity and beach stability, and in Venice, Italy, on "high" water issues. The International Telecommunication Union (ITU) has long offered assistance to developing countries for improving their maritime radiocommunication facilities. The World Telecommunication Development Conference (Buenos Aires, 21-29 March 1994) approved the Buenos Aires Action Plan (BAAP) composed of 12 programmes, one of them (programme 4) dedicated exclusively to the development of maritime radiocommunications. Each year, WMO organizes a number of conferences, seminars and workshops on storm surge, wave and flood forecasting, pollution transport modelling, climate data management, water quality assessment, meteorological/oceanographic design studies and so forth. Technical guides and handbooks have been published, and fellowships awarded for study in ICAM-related fields.

70. The Call To Action of the International Coral Reef Initiative (ICRI) of June 1995, draws attention to the significance of coral reef ecosystems for food production, tourism, recreation, aesthetics and shoreline protection. Coral reefs worldwide are threatened, 10 per cent of them already seriously degraded. Consequently, ICRI Governments endorsed the incorporation of integrated coastal management measures in coastal development plans and the establishment of coral reef initiatives to include programmes for community-based management or co-management of reef resources. Such initiatives are to include capacity-building, research and monitoring and periodic reviews.

B. Marine environmental protection

1. Environmental protection from sea-based activities

71. With the entry into force in November 1994 of the United Nations Convention on the Law of the Sea, 1982, Parties to that Convention are required to adopt laws and regulations in respect of many areas of marine po``ution prevention.

72. Current work within IMO is expected to culminate in the adoption of two new regulatory instruments. The draft text of an annex to the MARPOL Convention on air pollution, covering ozone depleting substances, incineration of wastes on ships, volatile organic compounds (VOCs), sulphur dioxide, nitrogen oxides and fuel oil quality, is scheduled for formal adoption during the biennium 1996-1997. A conference to be convened early in 1996 will consider the adoption of an international convention on liability and compensation for damage in connection with the carriage of hazardous and noxious substances (HNS) by sea.

73. Following the adoption in 1993 by the IMO Assembly of a code on the carriage at sea of irradiated nuclear fuel and other nuclear material (INF Code), IMO and IAEA are cooperating in the development of complementary requirements to the Code, such as liability, and emergency measures should INF containers be lost at sea. In February 1994, amendments to the 1972 London

Convention entered into force, prohibiting sea disposal of radioactive and industrial wastes and incineration at sea of industrial wastes and sewage sludge. IAEA, through the Arctic Seas Assessment Project, is evaluating the health and environmental risks posed by the dumping of radioactive wastes in the Arctic Seas.

74. Reference methods for marine pollution studies have been developed and promulgated by UNEP/IAEA at the Marine Environment Laboratory (MEL) in Monaco. The IOC/UNEP International Mussel Watch will assess the global distribution of persistent organochlorine pollutants. Networks of laboratories will also be used for observations of other contaminants as part of the IOC/UNEP/IMO/IAEA Global Investigation of Pollution in the Marine Environment (GIPME) programme.

2. Environmental protection from land-based sources of pollution

75. During the preparatory process for UNCED in 1990, GESAMP completed its second review of the state of the marine environment. The intergovernmental Meeting of Experts in Halifax, Canada in May 1991, considered the development of principles for the protection of the marine environment against pollution from land-based sources. UNEP convened, at Nairobi in 1991, a meeting of Government-designated Experts to Formulate a Draft Strategy for the Reduction of Degradation of the Marine Environment from Land-based Sources of Pollution and Activities in Coastal Areas, including a targeted and costed programme of action.

76. Based on the UNCED recommendation (Agenda 21, para. 17.26) the UNEP Governing Council, at its seventeenth session, in May 1993, decided 8/ to organize an intergovernmental meeting on those issues in 1995. Following a series of intergovernmental and expert consultations (Nairobi, 1993; Montreal, 1994; Reykjavik, 1995) the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities was adopted on 3 November 1995 by 109 States participating in an Intergovernmental Conference hosted by the Government of the United States of America in Washington, D.C.

77. The Global Programme of Action provides an excellent opportunity for strengthening international cooperation and establishing new, effective arrangements to support States and regional groups in their efforts to maintain and, where appropriate, restore the productive capacity and biodiversity of the marine environment, thus ensuring the protection of human health, as well as promoting the conservation and sustainable use of marine living resources.

78. The Global Programme of Action also calls for a concerted international effort to address the questions of waste-water treatment and management. It also recognizes the need to develop a global, legally binding instrument for the reduction and/or elimination of emissions and discharges and, where appropriate, the elimination of the manufacture and the use of persistent organic pollutants (POPs), identified in UNEP Governing Council decision 18/32. 9/

C. Marine living resources of the high seas

79. There has been a strong intergovernmental response to the development of detailed conservation and management provisions for straddling fish stocks and highly migratory fish stocks. The United Nations (Division for Ocean Affairs and the Law of the Sea) and FAO contributed significantly to the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks and other measures such as reporting on the use of large-scale pelagic drift-nets in high seas fisheries. The Conference adopted the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks 5/ in 1995. The Agreement, properly implemented by fishing nations, will promote the rational utilization of high seas fisheries resources. In collaboration with other relevant United Nations agencies, this work by the United Nations and FAO will be continued in the post-Conference period in terms of regular reporting, possibly to the United Nations General Assembly and/or the Commission on Sustainable Development, on the implementation of measures agreed on by the Conference.

80. In addition, the Code of Conduct for Responsible Fisheries, adopted by the Conference of FAO in 1995, will serve to enhance the sustainable utilization of all fisheries resources including those in the high seas, and the legally binding Compliance Agreement it contains should improve the control of reflagging for the purpose of avoiding internationally agreed management measures.

D. Marine living resources under national jurisdiction

81. FAO has revised its 1984 World Strategy on Fisheries Development and Management and has developed a Code of Conduct for Responsible Fisheries. It has provided technical assistance in the development of national fishery policies and management plans as well as in aquaculture development and related environmental protection. Priority has been given to artisanal fisheries, their improvement through better fishing and fish-handling methods and their integration in coastal area management. FAO also collaborated with the Government of Japan in the organization of the World Conference on the Role of Sustainable Fisheries in Food Security (Kyoto, 1995) and is preparing for the World Food Summit (Rome, 13-17 November 1996). In addition, following up on the Study of International Fishery Research (SIFR), the FAO Advisory Committee on Fishery Research (ACFR) has identified priorities for applied fishery research. In cooperation with the Economic Commission for Africa (ECA), the European Union and others, it has identified the priorities for aquaculture research in Africa, Asia and Latin America. Three new independent intergovernmental bodies dedicated to international fish trade have been created by FAO in the Middle East (INFOSAMAK, 1993), Africa (INFOPECHE, 1994) and Latin America and the Caribbean (INFOPESCA, 1994). Through its Subcommittee on Fish Trade, the FAO Committee on Fisheries has promoted free trade of fishery products in cooperation with the General Agreement on Tariffs and Trade (GATT) and the recently created World Trade Organization.

82. IMO and FAO cooperated in promoting the concept of cleaner harbours and landing places for fishing vessels and in the implementation and monitoring of international agreements concerning reflagging of fishing vessels. The World Bank contributed to the rationalization of investment policies in fisheries with the aim of reducing chronic overcapacity of fleets, improving the control and reduction of fishing effort and promoting the establishment of fishing rights. It assisted in the development of sound mariculture and coastal aquaculture programmes and provided financial support for the development and use of environmentally friendly technology. The United Nations (Division for Ocean Affairs and the Law of the Sea) has promoted the application of the relevant provisions of the 1982 United Nations Convention on the Law of the Sea, monitoring State practice, publishing legislative material and advising Governments on the implementation of Convention provisions.

E. Critical uncertainties and climate change

83. Cooperation and coordination within the United Nations system are assured through joint sponsorship and implementation of the relevant programmes. This also implies the pooling of resources at the international level. Cooperation is normally based on formal memorandums of understanding and agreements, which identify responsibilities and resources. Basic to many scientific programmes in the oceans is a knowledge of the sea floor topography. IOC has for many years worked with the International Hydrographic Organization (IHO) in a programme of systematic ocean mapping, known as GEBCO (General Bathymetric Chart of the Oceans). As an extension, attention must now be given to improving the knowledge of the sea floor topography of coastal waters. At the regional level, coordination takes place between the UNEP Regional Seas Programme and the regional IOC subsidiary bodies, including the network of national institutions. Regional intergovernmental organizations, such as the International Council for the Exploration of the Sea (CES) play an important role and are often partners with the relevant United Nations counterparts.

84. Regarding the state of the marine environment, the Global Investigation of Pollution in the Marine Environment (GIPME) programme, jointly sponsored by IOC, UNEP and IMO and partly by IAEA, is providing baseline information on ocean and coastal zone contamination and the effects thereof on the marine environment and ecosystems, on regional and global scales. This includes the development of reference methods, standards, training and the establishment of systematic observations - for example, the International Mussel Watch. The IAEA Marine Environment Laboratory has, through inter-agency cooperation, established a programme on standards and intercalibrations.

85. The Programme of Ocean Science in Relation to Living Resources (OSLR) developed in cooperation with FAO, has addressed (a) scientific uncertainties; (b) data and information bases; (c) the influence of ocean processes on distribution and production of living marine resources; (d) climate variability and change; (e) the influence of marine pollution and land run-off; and (f) changes in UV radiation. OSLR cooperates with the regional Large Marine Ecosystem (LME) programme developments in West and East Africa and the Eastern Asian Seas. The component concerned with evaluations of the harmful algal bloom (HAB) problem has established since UNCED a common approach to assessing this

global problem and elucidating its relationship to changing conditions. This latter problem is mainly considered by IMO through its Marine Environment Protection Committee, which has published the existing IMO guidelines.

86. The Global Ocean Observing System (GOOS) was initiated by IOC and is now jointly developed in a step-wise and modular approach by efforts of IOC, WMO, UNEP and ICSU. It is part of the United Nations system-wide Earthwatch coordinated by UNEP. The modular approach has been adopted because it can specifically address different user communities. This is also a reflection of the multisectoral coverage and interests as regards ocean uses. The five modules considered at present are oceans and climate (jointly with the Global Climate Observing System (GCOS)); health of the oceans; living marine resources; coastal zones; and ocean services. GOOS will make use of, and reinforce where necessary, existing ocean monitoring systems and programmes, including the Global Sea-level Observing System (GLOSS) of IOC; the Integrated Global Ocean Services System (IGOSS) of IOC and WMO; parts of the World Weather Watch (WWW) of WMO, including the voluntary observing ship network and the operational drifting and moored buoy networks, the Global Telecommunication System (GTS) and associated data management facilities; the International Mussel Watch of IOC and UNEP; the International Oceanographic Data and Information Exchange (IODE) system of IOC; ocean observation components of long-term global research programmes such as WOCE and CLIVAR, including XBT lines and buoys in the surface velocity programme.

87. While GOOS is global in concept and scope, implementation must take place (and is taking place) at the national and regional levels. National implementation mechanisms involve close coordination between GOOS and GCOS. Regional cooperative mechanisms have been or are being established in Europe, the North Pacific and South-East Asia. Regional implementation will also take place through the existing regional bodies of IOC, WMO and UNEP. Substantial economic and other benefits of systematic, operational ocean monitoring are already being demonstrated, particularly at the regional and national levels in such areas as short-term climate prediction impacts on agriculture and fisheries. Similar benefits are also evident in continuing improvements in oceanographic and meteorological services relating to ship management and safety and coastal inundation (storm surges).

VI. CONCLUSIONS AND PLANS FOR THE FUTURE

88. The United Nations system has contributed to raising awareness of sustainable development issues in the oceans and coastal areas. Institutional set-ups and management processes have been reviewed (e.g., establishment of the Commission on Sustainable Development and the ACC Subcommittee on Oceans and Coastal Areas and replenishment of the Global Environment Facility (GEF), particularly in the areas of international waters and biodiversity) and the coordination of United Nations agencies has been further improved. Legal frameworks and conventions have been developed and strengthened (e.g., on climate change, biodiversity and straddling and highly migratory fish stocks). Even though more progress is needed, the participation of NGOs in the international debate has been promoted and enhanced while more transparency has been achieved (e.g., in the straddling fish stocks issue).

89. A concern, however, may come from (a) the lack of much additional support for the burden that the various post-UNCED activities represent for countries and for United Nations agencies; (b) the insufficient flow of financial resources in support of national implementation (e.g. to reduce overcapacity in fisheries); (c) the relatively slow pace in the development of national capacity, particularly in the areas of information systems, research and institutions (despite the establishment of numerous new national institutions to guide the post-UNCED policy processes). The needed modifications of consumption (and trade) patterns have not yet been made (e.g., on overused coastal and fishery resources) but are being addressed by the Commission on Sustainable Development as well as by other bodies and organizations (e.g., in the context of ICAM) and in negotiations (e.g., on the Code of Conduct for Responsible Fisheries).

A. Integrated management of coastal areas

90. The understanding and appreciation of the value of ICAM is a critical matter. The concept has to be understood before it can be accepted as a development policy. Developing the concept and disseminating information on it and its application would therefore need priority attention. It would appear, however, that the development of a dual approach is necessary, further raising the awareness of policy makers about the benefits of ICAM while building up the capacity to apply ICAM in practice (strengthening national educational and training mechanisms is considered a matter of priority in the implementation of effective solutions). This requires a concerted effort from national and international organizations, and more inter-agency cooperation within the United Nations system is needed to harness existing capabilities better. Similarly, at the national level, intersectoral cooperation and coordination is needed to address current human resource development needs. The magnitude of such a task, in both its quantitative and qualitative aspects, calls for further strengthening and formally establishing effective communication networks between United Nations and non-United Nations organizations working in human resource development. Cooperation between developing countries and between developed and developing countries is essential in order to share experiences, information, materials and personnel.

91. Existing United Nations experience and expertise as well as the existing databases within the United Nations system have not always been utilized in the most effective manner. In addition, existing coordination mechanisms have not been fully used; linkages among organizations are often narrowly centred on one or a few projects and weakened by the absence of an overall strategy and a programme of action geared to assist countries in the application of ICAM. A major breakthrough in the establishment of a coordinated approach to coastal and ocean management within the United Nations system is therefore crucial and highly recommended.

92. Action required in the future includes:

(a) Development of plans for integrated coastal area, EEZ, and ocean management within national development plans, promoting human resource development through appropriate education and training;

(b) Development of appropriate administrative and legislative arrangements to assign rights and duties to coastal dwellers and users in order to regulate their activities;

(c) Improvement and better use of recently developed databases covering such areas as ICAM programmes, projects, courses, scientific data and information;

(d) Increased cooperation and coordination between organizations, arrangements and mechanisms dealing with water resources management and water resources development, drawing on the recent successful experience of the Black Sea and the Red Sea programmes and using other available mechanisms such as the UNDP/World Bank local donor groups.

B. Environmental protection from sea- and land-based activities

93. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, adopted in Washington, D.C., on 3 November 1995, identifies actions to be taken at the national, regional and global levels, as follows:

(a) At the national level the development of pragmatic and integrated plans for identifying and assessing (a) the problem areas, such as sewage, persistent organic pollutants (POPs), heavy metals and physical alteration of habitats; (b) the ecosystems of concern, including watersheds, coral reefs, mangroves and small islands; and (c) the sources of contaminants and other forms of degradation. States should also focus on setting their management objectives for priority problems related to land-based activities;

(b) At the regional level States should, among others things: (a) pursue more active participation in existing regional and international conventions and programmes of action; (b) develop, adopt and implement new comprehensive regional and subregional programmes on land-based activities; and (c) establish or strengthen regional networks for information management and capacity-building;

(c) At the global level there is a need for (a) regular reviews of the state of the world's marine and freshwater environment; (b) the development of a clearing-house mechanism through which decision makers can be provided with up-to-date information, practical experience and scientific and technical advice and expertise. The clearing-house, to be established through an inter-agency arrangement, would involve a data directory and information delivery mechanism.

94. The Programme of Action recommends approaches for each of the land-based sources/activities leading to the degradation of the marine environment falling under the following nine categories: (a) sewage, (b) persistent organic pollutants, (c) radioactive substances, (d) heavy metals, (e) oils (hydrocarbons), (f) nutrients, (g) sediment mobilization, (h) litter and (i) physical alterations and destruction.

95. The development of a universally acceptable funding formula that will permit developing as well as developed countries to afford the necessary investment for port waste reception facilities is being pursued by IMO in cooperation with UNCTAD. Similar schemes might be devised for funding other essential maritime services, such as navigational aids and other anti-pollution measures.

96. Similarly, there seems to be a bias on the part of the international community towards regulating offshore oil and gas activities in seas adjacent to developed countries, for example the North, Baltic and Mediterranean Seas, while ignoring the fact that in many regions of the world there is no regulatory framework. The apparent lack of commitment by Governments to widen environmental controls over offshore oil and gas operations through regional cooperation may be interpreted as strengthening the argument for developing such regulations at the global level.

97. While training facilities in developing countries in general require continuing and urgent technical assistance and support, the response to paragraph 17.38 (e) of Agenda 21, which calls upon States to provide secure financing for new and existing specialized international centres of professional maritime education, is of special significance in the context of future funding of the World Maritime University and other global institutions established under the auspices of IMO. Development of a funding mechanism based upon a levy on seafarers serving in foreign flag vessels could, if implemented, provide regular and complementary financing for the training and higher education of maritime personnel in developing countries.

98. Bearing in mind that the safety and environmental performance world wide of merchant ships and fishing vessels is primarily dependent on the professional standards of personnel serving on board, the adoption by IMO in 1995 of amendments revising the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers and the similarly styled International Convention on Standards of Training, Certification and Watchkeeping for Personnel on Fishing Vessels, 1995, will eventually have beneficial consequences for the marine environment. States are therefore urged to ratify or accede to these Conventions, and to implement their provisions as soon as it is practicable to do so.

99. Action required in the future includes:

(a) The establishment of self-sustaining financial mechanisms in support of, inter alia: (a) training of personnel; (b) navigational safety and anti-pollution measures in international straits; (c) waste reception facilities in ports; and (d) salvage and emergency response facilities and capacity-building in hydrographic survey and nautical charting. Where appropriate, existing cooperation arrangements should be used; for example, the UNCTAD/IMO/ILO Working Group on Coordination of Activities on Ports;

(b) The development, at the global level, of a regulatory framework for offshore oil and gas extraction activities, using IMO as the most appropriate lead body to undertake this task;

(c) Early ratification of the 1995 International Convention on Standards of Training, Certification and Watchkeeping for Personnel on Fishing Vessels and the amendments revising the 1978 International Convention on Standards of Training, Certification and Watchkeeping for Seafarers;

(d) The development and implementation of measures to control pollution from land-based sources and activities through (i) effective participation in and implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities; and (ii) strengthening existing arrangements and infrastructure within the United Nations system for marine pollution data quality control and the relevant training and capacity-building at the national and regional levels.

C. Marine living resources

100. Major conservation and management efforts are necessary if high seas fisheries are to continue to contribute in a sustainable way to feeding the world's growing population. Measures need to be enacted that will ensure that resources are not exploited excessively and that high seas fishing fleets acknowledge that the right to fish on the high seas is a conditional right.

101. To achieve the sustainable use of high seas resources (a) international agreements on measures governing resource use must be acceded to and ratified; (b) both flag and port States must ensure that measures agreed internationally are implemented fully and effectively; (c) subregional or regional fisheries management organizations or arrangements need to be further strengthened or established in order to carry out conservation and management functions. Immediate objectives are the assurance of ongoing international support for conserving and managing high seas fisheries, the provision of assistance to developing countries and, possibly, countries with economies in transition towards fulfilling their obligations with respect to high seas fisheries conservation and management and, where appropriate, assistance to enable these countries to participate in high seas fisheries.

102. Despite relatively intense activities along the lines recommended in Agenda 21, the utilization of many marine living resources under national jurisdiction is not yet sustainable. Further efforts are needed from all countries; developing ones require particular technical and financial assistance if effective action is to be taken to follow up on the implementation of the United Nations Convention on the Law of the Sea and the Code of Conduct for Responsible Fisheries.

103. In the high seas, there is a need to (a) formalize working relations between United Nations agencies and non-United Nations organizations concerned directly with high seas fisheries conservation and management as a means of improving collaboration and technical and scientific exchanges; (b) develop a programme of technical assistance (e.g., regional workshops, national assistance, technical cooperation among developing countries (TCDC) programmes, and training) for developing countries and countries with economies in transition so that they can fully meet international obligations with respect to high seas and participate in such fisheries.

104. In the areas under national jurisdiction, there is a need to improve (a) information systems on resources, environment and fisheries; (b) capabilities in fisheries research and management; (c) the state of marine living resources and environment; (d) the general economic status of fisheries, adopting effective schemes to regulate fishing effort and allocate resources; (e) the protection of endangered species; and (f) the approach to the management of small-scale fisheries.

105. Action required in the future includes:

(a) Adopting and implementing relevant international agreements and conventions, including (i) ratifying the 1982 United Nations Convention on the Law of the Sea; (ii) ratifying or acceding to the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks 5/ and in the mean time, applying it provisionally; (iii) applying the Code of Conduct for Responsible Fisheries adopted by the Conference of FAO in October 1995; (iv) acceding to the FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on High Seas; (v) ratifying the 1992 Convention on Biological Diversity and applying the Jakarta mandate on coastal and marine biodiversity, adopted at the second session of the Conference of the Parties, in November 1995;

(b) Establishing or strengthening of subregional or regional fishery management organizations or arrangements to carry out conservation and management measures, particularly for transboundary and shared fishery resources with a view to improving significantly their level of effective implementation;

(c) Developing or strengthening national fishery management authorities, with active participation of the fishing communities, recognition of indigenous people's rights, and in the context of Integrated Coastal Fisheries Management (ICFM);

(d) Enhancing aquatic living resources (e.g., for human nutrition needs) through sustainable mariculture/aquaculture practices, minimizing any adverse impact on coastal systems;

(e) Adopting a precautionary approach to fisheries, as provided for in the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks and the 1995 FAO Code of Conduct for Responsible Fisheries;

(f) Assisting developing countries with the financial assistance required to support their efforts to make sustainable use of their resources, for example, to start the process of effort-reduction, which should lead to improved biological and economic viability of fisheries.

D. Critical uncertainties and climate change

106. Most of the ongoing or planned programmes require a medium- to long-term effort to yield optimal results. Systematic observations will continue to be needed to follow the changes and refine the forecasts and the related response strategies or control measures. The increasing food and energy production requirements of a growing population will continue to require refined assessments of food and energy production capacities. There is a need for periodic review and adjustment of activities. Substantial research efforts will have to continue in order to understand and model complex interactions between ocean, atmosphere, land and ice as a basis for monitoring and predicting changes in the oceanic environment. The operational availability, for use by all countries, of a large variety of oceanic analysis and prediction products covering physical, chemical and even biological variables is now approaching reality. Further efforts are required by Governments to ensure that all can make the best use of these products as part of sound environmental management policies and practices.

107. The most important gap in the intergovernmental machinery is the lack of adequate mechanisms to support the institutional and infrastructural strengthening and developments required to give complete effect to programme area E of chapter 17 of Agenda 21, in particular as regards systematic observations. The United Nations system-wide programmes, together with the programmes of bodies outside the system, provide a good framework. However, the awareness among decision makers of the potential applications for management and development must be increased to ensure that the enormous potential benefits of recent scientific results (e.g., from TOGA on GIPME), will be applied to the extent required. The communication gaps must be addressed and the related institutional mechanisms strengthened. The capabilities, in particular of developing countries, to manage and apply data and products derived from systematic ocean monitoring must be substantially augmented if these countries are to benefit in a significant way from their own environmental and development programmes. Finally, it should be emphasized that financial resources need to be secured for research and observation programmes far above what is currently available.

108. Action required in the future includes:

(a) Strengthening relevant national institutions and their infrastructures to promote, in particular, interdisciplinary trained expertise and the development of the interface between research and the decision-making process. Ocean environmental subjects as part of overall sustainable development issues should be introduced in school curricula at all levels (see also the report of the Secretary-General on chapter 36 of Agenda 21 (Promoting education, public awareness and training) (E/CN.17/1996/14 and Add.1), which is before the Commission);

(b) Ensuring, through the provision of sufficient resources to national institutions, that ongoing and planned cooperative research on the oceans can be completed for the benefit of all;

(c) Supporting, through national institutions, the continued gradual establishment of a Global Ocean Observing System (GOOS), building on the existing systems so as to form a globally coordinated strategy to secure sufficient information for adequate management, forecasting and periodic scientific assessments of the state of the marine environment;

(d) Strengthening national institutions' capability to manage and use data and products derived from systematic monitoring, especially through GOOS, of marine environmental changes and commit themselves to high-level intergovernmental cooperation in the exchange of data and information.

E. International and regional cooperation

109. Implementation of a coherent strategy at the national, regional and international levels, as reflected in Agenda 21, would be reinforced by an approach aiming at (a) improved sectoral integration, using regional mechanisms where appropriate and with ICAM as the first priority; (b) improved information exchange, taking the opportunity of the potential offered by the new information technologies and taking into account especially the problems of developing country institutions and scientists; (c) ensuring regular intergovernmental review at the United Nations level; (d) effective coordination of the components of the United Nations system, through the ACC Subcommittee on Oceans and Coastal Areas, ICSPRO and common programme frameworks; and (e) enhancing the work of subregional and regional centres and networks.

110. The experience of the ACC Subcommittee on Oceans and Coastal Areas as task manager in preparing the report for the Commission on Sustainable Development on progress made in implementing chapter 17 in general has been positive. Sharing work between the participating organizations on a lead-agency basis turned out to be an effective tool for dealing with a subject as complex as oceans and coastal areas. The initiative taken by the Subcommittee in designing a Cooperative Programme Framework for Integrated Coastal Area Management is promising for future, more effective, collaboration between United Nations agencies; its potential for successful implementation, however, will still have to be proved in practice. The 1995 London Workshop on Environmental Science, Comprehensiveness and Consistency in Global Decisions on Ocean Issues recommended that the Subcommittee, in conjunction with relevant NGOs, be asked to suggest ways to make its work more effective and to give it more prominence.

111. Initially, a possible overlap of the task of the Subcommittee with that of ICSPRO was perceived. In practice, however, this did not occur, in particular since ICSPRO is a more task-oriented body, coordinating activities of joint interest and reporting directly to heads of ICSPRO agencies rather than through a higher layer of coordination. A typical example of a task of ICSPRO is the joint preparations for the International Year of the Ocean in 1998.

112. Action required in the future, at the regional level, includes:

(a) Reflecting the provisions and priorities of chapter 17 of Agenda 21 in the programmes and workplans of regional organizations and sectoral intergovernmental bodies;

(b) Facilitating regional technical and institutional collaboration, with associated assistance for human and infrastructure development;

(c) Monitoring of and advising on the implementation of chapter 17 at the regional level, identifying gaps and opportunities for joint programmes and using, to the extent feasible, the lead agency concept.

113. Action required in the future, at the global level, includes:

(a) The establishment of appropriate national policy mechanisms on oceans and coastal areas to harmonize national positions at the United Nations and its specialized agencies;

(b) Appropriate use of the technical competence of United Nations specialized agencies by the Global Environment Facility to support the process of priority setting, formulation of proposals and project execution, particularly in the biodiversity and international waters components;

(c) Use of existing effective mechanisms for inter-agency cooperation, such as the ACC Subcommittee on Oceans and Coastal Areas; GESAMP (the IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection); GIPME (Global Investigation of Pollution in the Marine Environment); and other agreements (e.g., memorandums of understanding) for issue-oriented action at all levels;

(d) Development of mutually beneficial partnerships between Governments and the private sector, on the one hand, and regional organizations and United Nations agencies, on the other, to achieve the implementation of chapter 17 of Agenda 21;

(e) Improvement of mechanisms for collaboration between NGOs and intergovernmental bodies to address more effectively the protection and development of the marine environment and its resources;

(f) Increased awareness of the impact of the ocean and coastal areas on the life of the planet, taking advantage of the opportunities presented by the International Year of the Ocean in 1998 and the 1998 World Exposition in Lisbon (Expo '98) which will have as its theme "The oceans, a heritage for the future".

Notes

1/ The Subcommittee is composed of the following organizations: Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations Secretariat, United Nations Conference on Trade and Development (UNCTAD), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), United Nations Centre for Human Settlements (Habitat) (UNCHS), Food and Agriculture Organization of the United Nations (FAO), Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), World Health Organization (WHO), World Bank, International Telecommunication Union (ITU), World Meteorological Organization (WMO), International Maritime Organization (IMO), United Nations Industrial Development Organization (UNIDO), International

Atomic Energy Agency (IAEA). The International Hydrographic Organization (IHO) and the International Council for the Exploration of the Sea (ICES) have participated in the sessions of the Subcommittee.

2/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

3/ Further details may be obtained from the agency that has assumed the lead responsibility for each of the programme areas of chapter 17 (see annex below). Inquiries of a general nature may be addressed to the secretariat of the Subcommittee (Ms. N. Philippon-Tulloch at IOC/UNESCO) or its Chairman (Mr. S. M. Garcia, Director, Fishery Resources Division, FAO).

4/ Detailed information on achievements at the national level were not available through the process of national reporting in time for inclusion in the present document.

5/ A/50/550, annex I.

6/ ICSPRO is composed of the following organizations: United Nations, UNEP, FAO, UNESCO (secretariat), WMO, IMO and IAEA.

7/ The following organizations are sponsors of GESAMP: United Nations, UNEP, FAO, UNESCO/IOC, WHO, WMO, IMO and IAEA.

8/ Official Records of the General Assembly, Forty-eighth Session, Supplement No. 25 (A/48/25), annex, decision 17/20.

9/ Ibid., Fiftieth Session, Supplement No. 25 (A/50/25), annex.

Annex

ACC SUBCOMMITTEE ON OCEANS AND COASTAL AREAS: SUB-TASK MANAGERS

Programme Area	Lead Agency	Contact Point	Address	Fax/e-mail/ tel
A: Integrated management and sustainable development of coastal areas, including exclusive economic zones	United Nations /UNEP	M. Hayashi, Director Ms. T. Melvasalo, Director (see below)	Division for Ocean Affairs and the Law of the Sea. Office of Legal Affairs. DC2-0450 UNITED NATIONS. New York 10017 USA	(1-212) 963 5847 doalos@un.org (1-212) 963 39 75
B: Marine environmental protection				
B(i): Sea-based pollution	IMO	Mr. O. Khalimonov, Director	Marine Environment Division 4 Albert Embankment London SE1 7SR UNITED KINGDOM	(44-71) 587 3210 e-mail not avail. (44-71) 735 7611
B(ii): Land-based pollution	UNEP	Ms. T. Melvasalo, Director	OCA/PAC UNEP P.O. Box 30552 Nairobi KENYA	(254-2) 622 788 e-mail not avail. (254-2) 622034/5
C: Sustainable use and conservation of marine living resources of the high seas	FAO/United Nations	H.Naeve, Senior Fishery Resources Officer	Fishery Resources Division. FAO Via delle Terme di Caracalla 00100 Rome ITALY	(39-6) 5225 3020 heiner.naeve@fao.org (39-6) 5225 6442
D: Sustainable use and conservation of marine living resources under national jurisdiction	FAO	idem		

E: Addressing critical uncertainties for the management of the marine environment and climate change	IOC	G. Kullenberg Executive Secretary	Intergovernmental Oceanographic Commission (IOC) UNESCO 1, Rue Mio!lis 75732 Paris Cedex 15 FRANCE	(33-1) 4065 9976 g.kullenberg@unesco. org (33-1) 4568 3983
F: Strengthening international and regional cooperation and coordination	ACC Subcommittee on Oceans and Coastal Areas	N. Philippon-Tulloch (Secretary)	IOC-UNESCO (see above)	(33-1) 4065 9976 n.philippon-tulloch @unesco.org (33-1) 4568 3986